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John Rennie

**A** CENTURY and a quarter ago (in 1804, to be exact), England was in a great state of anxiety. One might almost say, in a state of siege. The "tight little isle" did not feel nearly as secure as later events have proved it to be.

One man alone was responsible for the agitation. His name had already become a synonym for terror. The mere mention of Napoleon was enough to make every Englishman shake in his boots. Across the channel at Boulogne was the French camp, where evident preparations were in progress. Nor were the English altogether unprepared. A series of beacons dotted the shore in instant readiness to flash the news of warning of the Napoleonic invasion.

No wonder that anxiety was rife from the Crown to the humblest citizen. No wonder that the extraordinary dangers called for extraordinary expediences. And no wonder that the foremost engineer of his day was drafted to help stay the threat.

John Rennie was then about forty-three years old, at the height of his career. Moreover, he was a commanding personality, of great stature and strength. His early training had been as a student of the immortal Watt. Already he had a reputation as a mechanical engineer, but his greatest fame was in the field of the civil branch.

The expediency suggested was a simple one, that of flooding the lowlands between London and the coast—a stratagem borrowed from the successful exploits of the Dutch.

Rennie was commissioned to investigate the project. His report on the matter is contained in a letter dated

September 4, 1804, the original of which is owned by Charles E. Fowler, M. Am. Soc. C. E. This report, made "in consequence of orders received from his Royal Highness, the Commander in Chief," details the dimensions of various outlet sluices between the River Lea and Barking Creek useful "in case an enemy were to advance too near to London." Needless to recall, the invasion never materialized, and the fair lands of Southeast England were not flooded.

The cause for all this is another story. It is of interest to note, however, that Robert Fulton just previously had offered to Napoleon the use of his steamboat, but had been refused. What might have happened had Napoleon availed himself of this

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## Paid-Up Plan

**A**T an opportune moment it is practicable to announce a revised (downward) schedule of rates for the purchase of fully paid-up dues.

About two years ago the plan providing for the payment of all future dues by the purchase through an insurance company of an annuity payable to the Society was worked up and announced. Now the schedule of rates has been revived making the costs, for the younger men, practically 10% less.

Part I of this issue of Proceedings, on page 390, gives the details of the plan and the revised schedule. The new schedule is effective at once and at the time when dues are due may be welcome.

## Boxed by the Compass

*A friend (who shall be nameless) furnishes this "story" which, however, he vouches as substantially "fact."*

**A** DOG chasing his tail never gets very far. This is a story about some engineers who had little better luck. All surveyors have compasses, and these men were no exception to that rule. They started out to explore a small island off the Alaskan Coast. It was only 10 miles across, and so a small supply of provisions seemed ample. Although the timber was tall and dense (typical of that coast) and the light correspondingly poor, surely an ordinary compass could not lead any one far astray in 10 miles—or at least so they thought.

Blithely the party set off from their boat. And they explored. But why didn't they come back? The third day, their friends on board became anxious and a rescue party was organized, likewise armed with victuals—and a compass!

It started out and aimed east, let us say. It started east and it continued east, and it went east for two days. The rescuers decided the island was charmed. Perhaps it was elastic and was expanding. They swore it was 100 miles across. A fine "rescue" party, they! The "blind leading the blind" had nothing on them, one remarked. Finally, some one suggested that perhaps the compass was off. He was almost murdered for trifling with a serious matter.

But the suspicion would not down. So they decided to follow down stream along a small river infested with salmon, for it was spawning season. Sure enough, they came shortly to the shore and rejoined their boat—and there they found the lost party.

In each case, after several days, the same enlightenment had dawned upon each party—that the island was highly magnetized, that their “North Pole” was somewhere toward the middle of it, and that in the jungle darkness they must have traveled several laps around this in circles. Now they all pose as authorities on that famous scientific question: When is a compass not a compass?

## The Mississippi

SO great is the interest of every one in the Mississippi River problem that by a concerted effort all of the 14 papers presented on that subject at the Columbus Meeting, except (unfortunately) one, have been incorporated in this number of Proceedings and so made promptly available to the membership at a time coincident or even prior to the discussion which is certain to take place in Congress.

The paper by S. M. Woodward and Floyd A. Nagler, which had to be omitted because it was impracticable to finish all the engravings, will appear in the next issue, but will also be assembled with the others in a separate reprint devoted to this subject. Col. Spalding's description of the rescue work, it is hoped, will also be available for inclusion in that reprint, which perhaps will be a preprint for these two articles.

It was only by the hearty co-operation of the authors, the editors, the printer, the engravers, and others, and by subjecting the authors of other papers already in hand to a delay that the timely publication of this Symposium was possible.

## A New Committee

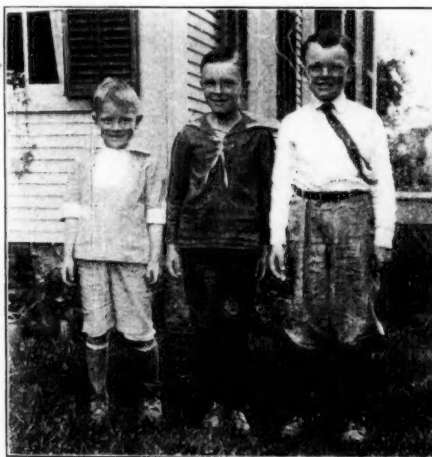
THE personnel of a new committee may now be announced. It is that of the “Special Committee on Fees and the Method of Making Fees for Engineering Services.”

For the purpose of facilitating their work, all the members are resident in one community and at the suggestion of the Board of Direction this community is New York City.

The Committee consists of: W. S. Kinnear, Chairman; H. Eltinge Breed; W. W. Colpitts; J. Vipond Davies; C. W. Hudson; I. W. McConnell; Ralph Modjeski; R. R. Rumery, and J. F. Sanborn.

## John H. Dunlap's Family

THE many members of the Society that knew Mr. Dunlap, who, as Secretary of the Society, was killed in a railroad accident near Chicago while returning from the Summer



Clark, Richard and George Dunlap

Meeting at Pasadena in July, 1924, will be glad to hear somewhat about his family.

Mrs. Dunlap and the three boys are now living in Vermont. Mrs. Dunlap has been seriously ill, but it is felt that she is recovering, though slowly. The three children are right husky lads, typical boys; and Clark, the youngest, is his father over again.

During the summer Mr. Allen Hazen, Vice-President, and Mr. Sydney Wilmot, Technical Editor of the Society, while on his vacation, called on the family and Mr. Wilmot visited the grave of Mr. Dunlap. He is buried on a quiet Vermont hillside, in the Town of Franklin, his resting place marked by a family stone of good though modest character.

Mr. Hazen took a snapshot of the boys which we are glad to reproduce.

## An Engineer Memorial

WITH a really unusual degree of spontaneity, plans have gone forward for the Engineers of America, through the medium of the four Founder Societies, to render a graceful tribute to Belgium, our little Ally in the Great War.

It is proposed that each member,

so far as he will, “chip in” something to provide the new Library Building at the University of Louvain with a clock, each of its four faces representing one of the great National engineering societies of Civil, Mechanical, Mining, and Electrical Engineers, and at the apex of the tower a carillon of thirty-six bells.

Details of the plan are elaborated on page 389 of Part I of this issue of the Proceedings and are worth looking into. It seems as if such a happy memorial of our dead and such a perpetual symbol of the engineers of America should impel each one of us to want to be in with the crowd that is putting the project over.

## “Vol. 1, No. 1”

VOL. 1, No. 1, of the “organ” of the Los Angeles Section, American Society of Civil Engineers, dated November, 1927, has made its debut.

It is an interesting pamphlet, this issue consisting of seven 8½ by 11 pages, featuring a résumé of a paper presented before the Section and carrying notices of coming events, personals, and jokes.

The Los Angeles members are holding monthly “caravans” or excursions to various points of interest in the vicinity of that city. This first issue also calls especial attention to a Ladies' Night at the Vista del Arroyo Hotel, where they were to learn about “Motion Pictures and How Some Effects are Produced,” the demonstration to be followed by dancing.

The Los Angeles Section has a right smart number of members though it's impossible to say how many, because it has always added some more since you counted.

## A Raise in Pay

TO the gratification of every one the effort made to increase the salaries of technical men in the employ of New York City has attained a real measure of success.

This effort was no sporadic, half-formulated endeavor, and the fact that it did succeed therefore provides a demonstration of a practical method whereby similar problems elsewhere may be approached. On page 385 of Part I of this issue of Proceedings the story is told with painstaking detail.



## Freeman Fund Scholars Report

AT various times since the three representatives of the Society enjoying the Freeman Fund Traveling Scholarship arrived in Europe, reports of their activities have reached Headquarters. By piecing these together, a comprehensive view of the work being accomplished is obtained.

It should be remarked that these men left this country at different times and by different routes. Lorenz G. Straub arrived on July 8 at Southampton, and in Berlin a week later. Morrrough P. O'Brien landed in Rotterdam on July 28; while F. Theodore Mavis, the last of the trio, went direct to Germany, reaching Bremerhaven July 31. Subsequently this number was augmented by three other young American engineers, winners of similar prizes, provided by Mr. Freeman's generosity through other societies, so that the entire group finally comprised six engineers.

The first phase of their work consisted of an inspection tour covering many of the more important hydraulic laboratories of Germany. Fortunately, Mr. Freeman himself was able to accompany the men on this trip which made a circuit including South Germany, the Rhine Valley and the North Sea coast.

Discussing the laboratories at Wilhelmshaven, Mr. Mavis states that "This laboratory differs from any of the others in Germany, I understand, in that all the studies which are made there pertain to the problems of the Naval Base Harbor at Wilhelmshaven. The model in the laboratory is a copy of the harbor on a scale of 1 to 250. It was the opinion of engineers in the laboratory that a distorted model, at least for studies of the kind made at Wilhelmshaven, would lead to erroneous results. There seems to be a difference of opinion among engineers here in Germany on this point."

Another important visit (in Berlin) was to the "Versuchsanstalt für Wasserbau und Schiffbau on the Schleusen Insel. This laboratory, together with the outdoor laboratory covering nearly 20 hectares near Potsdam, is equipped to handle experiments on hydraulics, river control, dams, foundations, and ships. It is wholly a research and commercial laboratory and soon will be, if indeed it is not already, the largest

Wasserbau Laboratorium in Germany."

American engineers are more or less familiar with the famous Deutsches Museum in Munich which has previously been described in Proceedings. After three days spent here, Mr. Mavis reports that it "is by far the most interesting and instructive museum I have seen. There were models of water power developments, river control works, harbor projects, of motors, pumps, turbines and countless other machines, ships, etc."

Thus far the studies of these men had been confined to Germany with Headquarters at Berlin. During the latter part of August, however, Headquarters were shifted to Danzig, where for about a month the men were privileged to study under Dr. Winkel, celebrated hydraulic authority, who gave them a series of special lectures on the Similitude of Models.

The close of Dr. Winkel's lectures at the end of September again marked a parting of the ways, and a third phase in the conduct of studies. Mr. O'Brien went farther north to Stockholm, where he was so impressed with the appearance of the work being carried on, that he determined to remain for the winter. He expects his studies will yield important results in connection with the efforts of the other students which are to be confined to Germany.

Meanwhile, Messrs. Straub and Mavis spent three weeks in a tour, including Poland, Austria and Southern Germany, preliminary to taking up their studies in Karlsruhe.

Again quoting Mr. Straub: "In Munich I had the pleasure of meeting Professor Thoma and of seeing his laboratory, a very different one from any that I had previously seen in Europe. The laboratory at the Technische Hochschule in Munich is designed principally for the study of flow in pipes, the testing of turbines and the like. However, it may be readily used for river investigations as well. I also inspected control works along the Isar River.

"Since arriving in Karlsruhe most of my time has been spent in the hydraulic laboratory of the Technische Hochschule. With Professor Rehbock's intense enthusiasm over this work and the large laboratory at our disposal, the next few months' work

here should prove very valuable."

From these brief fragments of the reports, it must be clear that the aim of the donor of these scholarships bids fair to be fully realized. What the net results of the various studies will be in terms of future American engineering practice is entirely a matter of conjecture, but certainly they are bound to have a stimulating effect, especially through the leadership of enthusiastic and capable young men benefiting from the best European practice.

## December Proceedings

IN describing recent Proceedings, the stock of superlatives has been severely taxed. Little more can be said of the current December number than of its predecessors except that whatever virtues they have possessed collectively this number seems to have all of itself. It ends the year in the popular "blaze of glory."

The major part of the publication is given over to a most valuable series of papers forming a Symposium on "Flood Control with Special Reference to the Mississippi River." When these papers were read at the Columbus Meeting, they caused widespread, favorable comment. To paraphrase all of them would be impossible; to single any one for special mention would be invidious. To study them is to learn the most reliable and up-to-date engineering thought on the vast Mississippi River problem, a fact witnessed by the following list of the authors: Maj. Gen. Jadwin, Col. C. McD. Townsend, Mr. N. C. Grover, Col. C. W. Kutz, Mr. E. F. McCarthy, Col. William Kelly, Mr. Arthur E. Morgan, Mr. John F. Coleman, Maj. S. C. Godfrey, Mr. Marcel Garsaud, Mr. C. E. Grunsky, Mr. Elwood Mead, Col. F. W. Scheidenhelm—all Members of the Society.

A paper by Henry Goldmark, M. Am. Soc. C. E., describes the "Emergency Dam on Inner Navigation Canal at New Orleans, Louisiana." In brief, this consists of a swing bridge pivoted on the lock wall and depositing in succession a series of steel girders—stop-logs—across the lock. Relatively, it is considerably more economical than its predecessors, the Panama Emergency Dams.

R. McC. Beanfield, Assoc. M. Am.

Soc. C. E., contributes a most interesting paper on "Unusual Engineering Features of an Immense Theatre Building." The building in question is the Shrine Auditorium in Los Angeles. The various details of structural work, ornamentation, acoustics, and ventilation mark this structure as one of the largest and most beautiful in this country at least, and in addition one of the best equipped.

"The Construction of the Alameda County, California, Estuary Subway" is described by Alvin A. Horwege, Assoc. M. Am. Soc. C. E. This important tunnel was built in twelve parts in the open by an ingenious method, utilizing a dry dock specially fitted for this work. Thence the segments were floated into position and sunk in place.

In addition to these excellent papers, numerous discussions are presented (52 in all) covering a wide variety of topics represented by 20 papers previously printed. Memoirs of four deceased members are also published.

No description of the December Proceedings would be complete without mentioning the indexes. These are two in number, one covering Society affairs and the other, Papers and Discussions. The various Items of Interest, Minutes of Meetings, Papers, Discussions, Reports and Memoirs that have been printed during the year just ending are here listed for convenient reference. These numbers of Proceedings for 1927 total about 3,700 pages, a record size.

## A True Story

**I** WENT to the meeting of the Society last Fall at Philadelphia. The first day I was there, not a soul spoke a single word to me and I went to bed that night damning the Society for a bunch of cold-blooded, high-hatters, or worse. I saw others talking vivaciously together, but they had no use for me—I was nobody. I made up my mind to go home on the first train the next morning.

However, in the morning I said: "I've been at some expense to come to this meeting and I'm going to stay one more day and I'm going to test this situation out. I'm going to speak to any one, *any one*, I don't care who it is, from the President down, that's wearing a badge, and see what happens." And I did.

I found the President just as willing to talk to me as anybody. I tried

the Past-Presidents, and the Vice-Presidents, and the Directors, and everybody I approached was in a happy mood, ready to talk technique, or to jolly, or to discuss the trips or the weather just as pleasantly and congenially as would my own brother. More so, in fact. Every one was on his toes, full of pep and ready to enjoy himself thoroughly. I stayed the week through and never had a better time in my life.

Toward the end of the week I spoke to a wallflower and found him just as I had been on my first day. He said I was the first man he'd met that had spoken to him and I took him in hand. I asked, "Want to meet the President?" and he replied, "Do you know him?" and I said, "Sure! Come on, let's go see him." And we did. Later, I told the wallflower what I'd learned during the week—that my stupid time was my own fault and that when I had done my share I had a bully time.

The above is as nearly as possible a verbatim account as told to one of the officers of the Society by a member who said his object in telling it was in the hope that it might be of help to others who felt themselves neglected by their fellow members in the Society.

## Columbus Meeting

**T**HE Columbus Meeting has gone down into history.

Doubtless the outstanding feature about it was the day and a half discussion of problems incident to the control of the Mississippi River, although the several Technical Division meetings were exceedingly well attended, and were reported to have been more than usually successful.

It was a pleasure to see the commodious meeting rooms comfortably filled and to hear the comments in the corridors on such-an-one's paper, or an inquiry as to whether or not one had heard so-and-so's paper on this or that.

There were features for all, varying in degree of appeal from a highly mathematical treatise to a football game—in which it is regretted the home team was not the winner.

Nor were the ladies forgotten prior to the football game. For them were arranged trips about the City, a tea at the Governor's mansion, with the Governor's lady presiding most graciously, and a tea at one of the popular and beautiful country

clubs. It has become a definite part of a Society meeting that the ladies shall be thoughtfully provided for while the men carry on more weighty matters.

Two dinners, a dance, an illustrated lecture on the Story of the Stars, and a visit to Ohio State University, were incidents of no minor character.

One event not scheduled was a Students' Breakfast at which the Board of Direction members, Honorary Members, and Past-Presidents sat down to grape fruit, ham and eggs, and coffee with those members of the Student Chapters present, and were all good fellows together. This is not the first such breakfast, and it will not be the last.

Nor will one forget the careful description of the Columbus' water supply, its development, and its treatment, supplemented by a visit to the structures described and demonstrations of its operation.

From every point of view the Columbus Meeting was a success.

## John Rennie

(Continued from page 1)

possibility is a matter of conjecture.

Rennie's work continued for many years. His fame rests secure on a number of important structures that still stand. Engineers even in America are familiar with the names of London Bridge, Southwark Bridge, and Waterloo Bridge, all mementoes to Rennie. It may be recalled that recently Waterloo Bridge suffered in the settling of one of its river piers. England was alarmed at the danger of losing this historic structure, but fortunately the difficulty was overcome by underpinning the foundation.

Other eminent accomplishments of Rennie were the Plymouth Breakwater and the Bell Rock Lighthouse. The Rennie tradition was carried on by two sons, likewise eminent, George Rennie and John Rennie, the latter of whom was knighted and became President of the British Institution of Civil Engineers, serving from 1845 to 1848.

It is a curious coincidence that John Rennie, the elder, died in 1821, the same year as Napoleon, but a few months later. Thus were two great lights extinguished almost at the same time, one of whom had dealt largely in destruction and fear, whereas the other had faithfully served the worthy ends of construction and security.

